REMARKS/ARGUMENTS

Reconsideration of this application is respectfully requested.

In the office action, claims 11-18 were withdrawn from further consideration as being drawn to a non-elected invention, claims 34 and 35 were objected to and 19-37 rejected under 35 U.S.C. §§§ 112 1st and 2nd paragraphs and 103(a). By the present amendment claim 19 has been amended and claims 22-37 have been cancelled without prejudice or disclaimer in order to expedite prosecution and allowance of the subsisting claims. Claims 19-21 are pending in this application and are at issue.

The issues raised by the Examiner in the Office Action are summarized and addressed below.

I. Oath/Declaration

In the Office Action, the Examiner contended that the Oath or Declaration was defective because the method claims (19-37) were not filed in the original application with the original Oath although, allegedly, there was no statement or indication in the file of record that all of the Inventors listed in the original Oath were the Inventors of the newly added method claims 19-37, the Examiner stated that a new Oath or Declaration in compliance with 37 C.F.R. 1.67(e) was required.

Applicants will provide a new Oath or Declaration in due course upon the indication of allowable subject matter.

II. Objections

The objections to claims 34 and 35 have been rendered moot by the cancellation thereof.

III. Rejections Under 35 U.S.C. §112, 1st Paragraph - Written Description

The rejection of claims 24, 25, 27, 30, 31, 32, 34 and 37 under 35 U.S.C. § 112, 1st paragraph, as failing to comply with the written description requirements, has been rendered moot by the cancellation thereof.

IV. Rejections Under 35 U.S.C. §112, 1st Paragraph - Written Description

Claims 19-37 were also rejected under 35 U.S.C. §112, 1st paragraph because the Examiner contended that the specification, while it being enabling for a method of treating cancer in a mammal comprising directly administering to a tumor in the mammal a recombinant adenovirus containing an expression vector comprising the P972 gene, a promoter operably linked to the P972 gene and an *in vitro* method of inhibiting the growth of a mammalian tumor cell comprising contacting the tumor cell with the recombinant adenovirus, did not reasonably provide enablement for a method of treating cancer in a mammal comprising contacting tumor cells or directly administering said recombinant adenovirus to a mammal. The Examiner concluded that the specification did not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims.

To support these assertions, the Examiner has cited several articles which allegedly disclose the obstacles of gene therapy (i.e., unpredictability) in particular, delivery and multiplication of the vector used to deliver the therapeutic gene, citing articles by Anderson *et al.*, Verma, Vile *et al.*, Gomez-Navarro *et al.*, McNeish *et al.*, Green *et al.*, Alemany *et al.* and Gromeier.

In addition, the Examiner further contended that one disclosed example of estrogen receptor-positive tumor cells (MCF7), and two examples of metastatic tumor cells (HeLa and HM-7) was not sufficient to support all estrogen receptor-positive or metastatic tumor cells.

Lastly, the Examiner contended that the claims were not enabled because there was no correlation between results obtained *in vitro* and those that a skilled artisan would expect

to occur *in vivo*. The Examiner was of the opinion that there was insufficient evidence in the specification and relevant art to support *in vivo* efficacy, and that successful treatment of individuals would require undue experimentation.

This rejection is respectfully traversed and reconsideration respectfully requested.

By the present amendment, claim 19 has been amended to require that the administration is *directly* into the tumor, and not systemic administration.

Support for the amendment claiming the procedure and the effect of the claimed method, is sufficiently provided in the instant specification including Examples 5-7 and the Figure.

Applicant's respectfully submit that those of ordinary skill in the art would be enabled to make and use the claimed invention from reading the instant disclosure.

On page 6 of the Office Action, the Examiner has admitted that the specification enabled treating cancer by directly administering the adenovirus to the tumor. On page 9 of the Office Action, it is stated:

> "Furthermore, with respect to the treatment method in claims 19-37, the specification is only enabled for cancer therapy comprising directly administering to tumor cells said recombinant adenovirus comprising P972 gene and a promoter operably linked to the gene..." Applicant respectfully submit that this is claim 19 as amended.

In addition, on page 10 of the Office Action, it is stated:

> "Furthermore, it would take one skilled in the art an undue amount of experimentation to determine what route of administration *(e.g.* intravenous, dermal, nasal, rectal, vaginal, inhalation, or topical administration) other than direct administration to the tumor cells would result in a therapeutic response using the recombinant adenovirus encoding P972."

The Examiner's contention that experimental data using three cell lines was not sufficient to support treatment of all ER-positive or metastatic tumors has been rendered moot by the cancellation of claims 30-33. In terms of the Examiner's contention that there

was insufficient data to support a correlation between *in vitro* and *in vivo* efficacy, Applicants present the following:

The specification provides *in vivo* data of tumor growth inhibition in nude mice for the HM-7 tumor cells. Applicants respectfully submit that the standard for patentability under 35 U.S.C. differs from the standard for regulatory approval by the Food and Drug Administration for marketing approval. It is accepted and well established that data obtained *in vivo* in animals, such as mice, establishes a reasonable expectation of a similar result in humans, for patentability purposes. See *Scott v. Finney*, 34 F.3d 1058, 32 USPQ2d 1115 (Fed. Cir. 1994, a highlighted copy is appended hereto as Exhibit 1) "Testing for the full safety and efficacy of a prosthetic device is more properly left to the Food and Drug Administration (FDA). Title 35 does not demand that such human testing occur within the confines of patent and trademark proceedings", and *In re Brana*, 51 F3d. 1560 (Fed. Cir. 1995 a highlighted copy is appended hereto as Exhibit 2) "FDA approval, however, is not a prerequisite for finding a compound useful within the meaning of the patent laws. *Scott*, 34 F.3d. 1058, 1063, 32 USPQ2d 1115, 1120. Usefulness in patent law, and in particular in the context of pharmaceutical inventions, necessarily includes the expectation of further research and development. The stage at which an invention in this field becomes useful is well before it is ready to be administered to humans"

As for the McNeish et al. article, applicant's respectfully submit that the claimed adenovirus vector is different from the one disclosed therein.

Therefore, Applicants respectfully submit that the rejection of claims 19-37 under 35 U.S.C.§112, 1st paragraph for enablement is not well taken and it should be withdrawn.

V. Rejections Under 35 U.S.C. §103(a)

The rejection of claims 28 and 35 and 28, 29 and 35 under 35 U.S.C. §103(a) has been rendered moot by the cancellation thereof.

VI. Rejections Under 35 U.S.C. §112 2nd Paragraph

The rejection of claim 34 under 35 U.S.C. §112 2nd paragraph has been rendered moot by the cancellation thereof.

VII. Conclusion

Claims 19-21 are in a condition for allowance.

In view of the above Amendments and Remarks, reconsideration of this Application and issuance and the Notice of Allowance for claims 19-21 is earnestly solicited.

Dated:

Respectfully submitted,

By_____

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